Write your name here

Surname | Other names ANSWERS

Centre Number | Candidate Number

Edexcel GCSE

Mathematics A

Paper 2 (Calculator)

Foundation Tier

Thursday 8 November 2012 – Afternoon
Time: 1 hour 45 minutes

Paper Reference
1MA0/2F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

ND024652770

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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6/6/7/

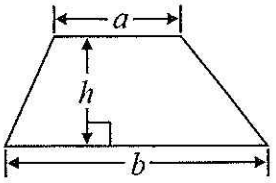
PEARSON

GCSE Mathematics 1MA0

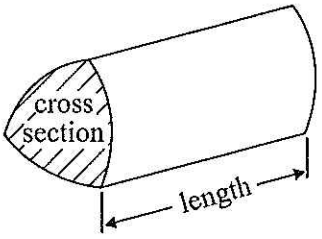
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length

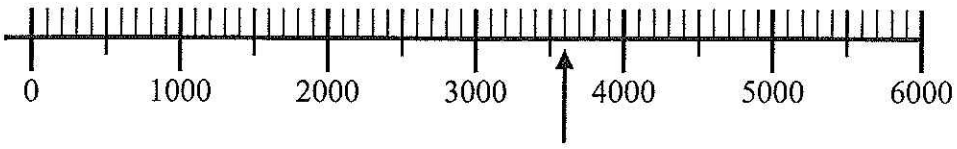


Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 (a)

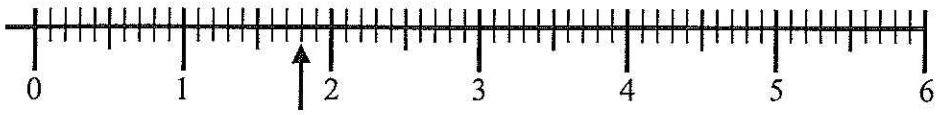


Write down the number marked by the arrow.

3600

(1)

(b)

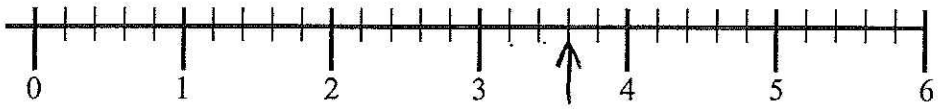


Write down the number marked by the arrow.

1.8

(1)

(c)



Find the number 3.6 on the number line above.

Mark the number with an arrow (↑).

(1)

(Total for Question 1 is 3 marks)

2 Here is a list of the dried fruit 24 people liked best.

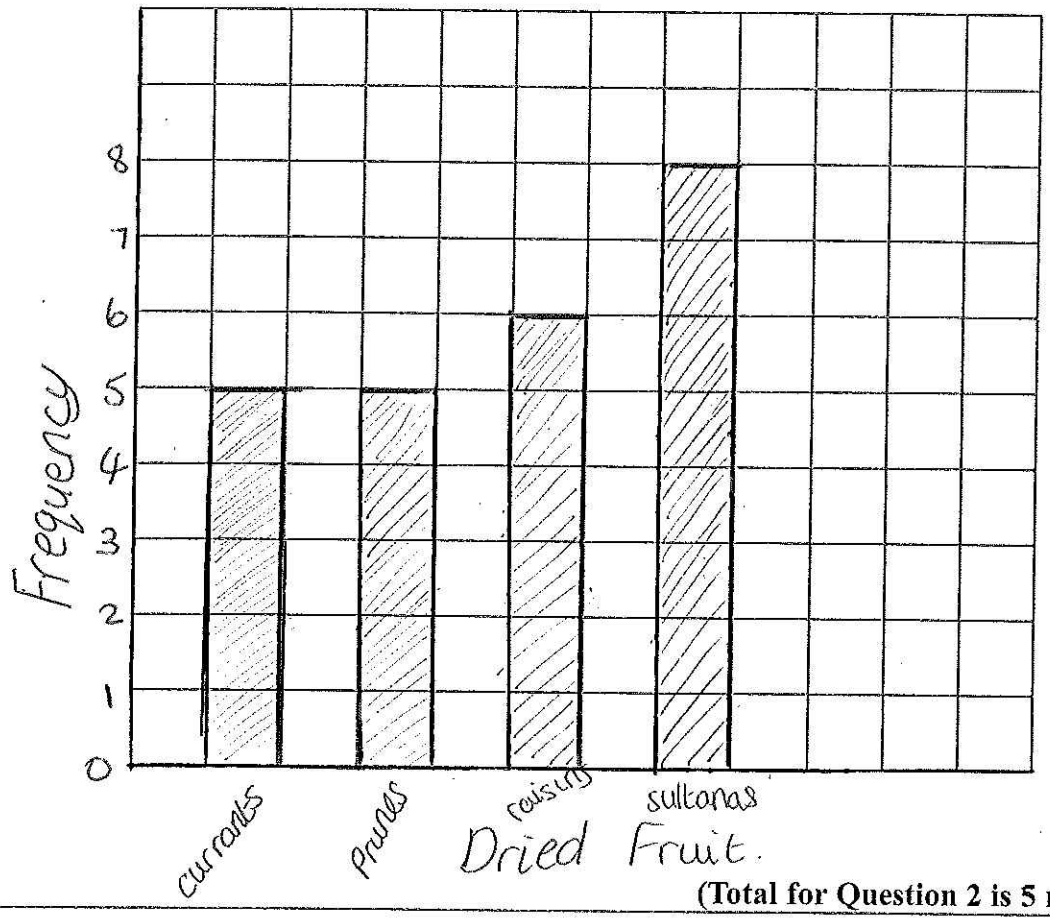
currants	sultanas	currants	raisins	sultanas	prunes
prunes	currants	sultanas	prunes	raisins	raisins
raisins	currants	currants	prunes	sultanas	sultanas
raisins	raisins	sultanas	sultanas	prunes	sultanas

(a) Complete the table for the information in the list.

Dried Fruit	Tally	Frequency
currants	𝍸	5
prunes	𝍸	5
raisins	𝍸 |	6
sultanas	𝍸 |||	8

(2)

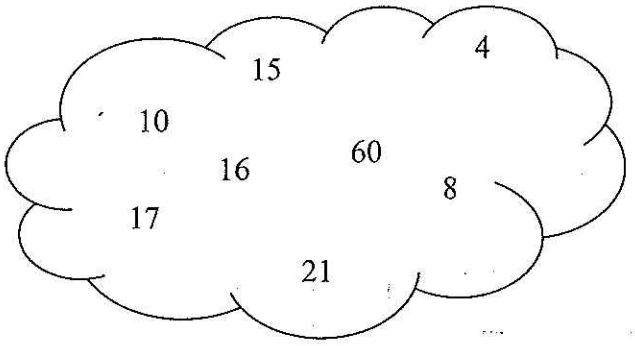
(b) Draw a suitable diagram to show this information in the table.
Use the space below or the grid opposite.



(3)

(Total for Question 2 is 5 marks)

3



From the numbers in the cloud,

(a) write down a square number,

4 or 16

(1)

(b) write down a multiple of 7,

21

(1)

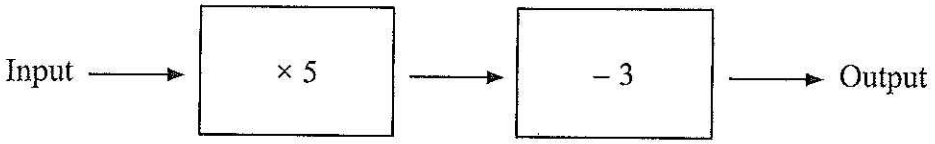
(c) write down a factor of 30

10 or 15

(1)

(Total for Question 3 is 3 marks)

4 Here is a two-stage number machine.
It multiplies by 5 and then subtracts 3

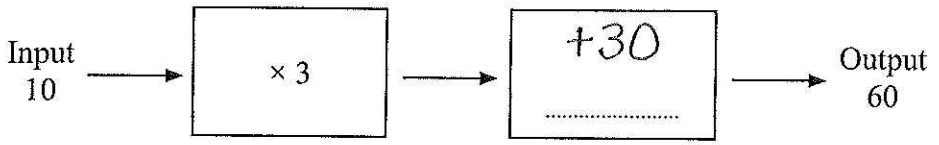


(a) Complete the table.

Input	Output
1	2
2	7
5	22
7	32
10	47

(2)

Here is a different two-stage number machine.



When the input is 10, the output is 60

(b) Complete the number machine.

(1)

(Total for Question 4 is 3 marks)

*5 Jim's pay is £180 each week.

Jim asks his boss for an increase of £20 a week.

Jim's boss offers him a 10% increase.

Is the offer from Jim's boss more than Jim asked for?

You must show your working.

10% of £180
180 ÷ 10 = £18.

A 10% pay rise is £180 + £18 = £198
but £20 per week pay rise is £200,
so the offer Jim asks for is better.

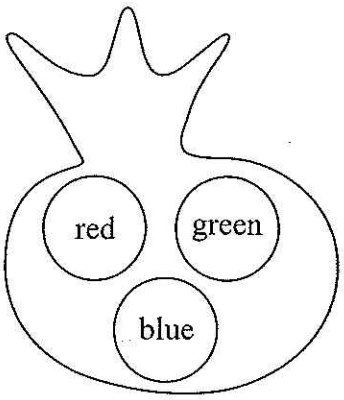
(Total for Question 5 is 3 marks)

6 There are 3 counters in a bag.

One counter is red.
One counter is green.
One counter is blue.

Mike takes at random a counter from the bag.
He puts the counter back in the bag.

Then Ellie takes at random a counter from the bag.



(a) Is Ellie more likely to take a blue counter from the bag than Mike?
You must explain your answer.

No, Ellie is not more likely to pick a blue as the probability is the same, as there are the exact same counters in. (1)

(b) Write a list of all the possible combinations of the two counters that Mike and Ellie can take.

(B,R) (B,G) (B,B) (R,G) (R,R) (G,G) (R,B)
(G,R) (G,B)

(2)

(c) Find the probability that Mike takes a blue counter and then Ellie takes a green counter.

$\frac{1}{9}$

(1)

(Total for Question 6 is 4 marks)

7 Here is a list of numbers.

4 8 5 9 10 5 6 3 4

(a) Work out the median.

3, 4, 4, 5, 5, 6, 8, 9, 10

5

(2)

(b) Work out the mean.

3 + 4 + 4 + 5 + 5 + 6 + 8 + 9 + 10 = 54

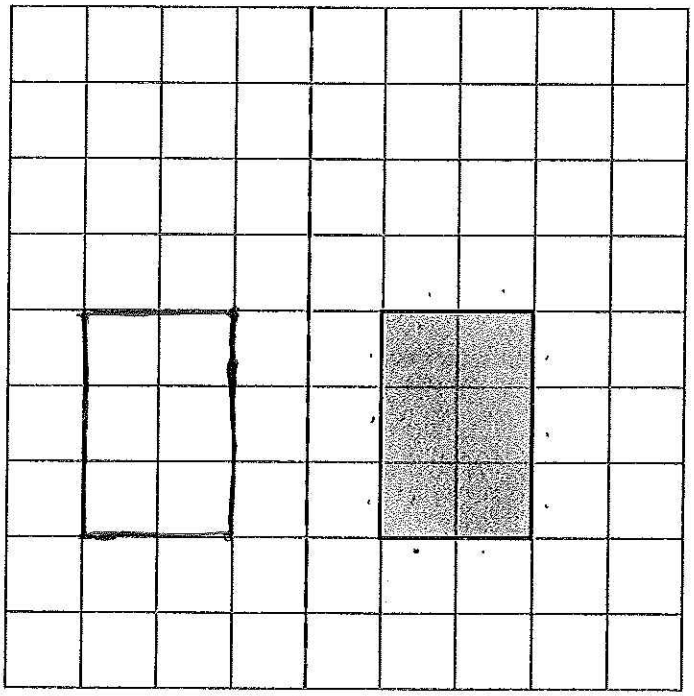
54 ÷ 9 = 6

6

(2)

(Total for Question 7 is 4 marks)

8 Here is a shaded shape on a grid of centimetre squares.



mirror line

(a) Find the perimeter of the shaded shape.

10 cm

(1)

(b) Find the area of the shaded shape.

6 cm^2

(1)

(c) Reflect the shaded shape in the mirror line.

(2)

(Total for Question 8 is 4 marks)

9 Here is a cuboid.

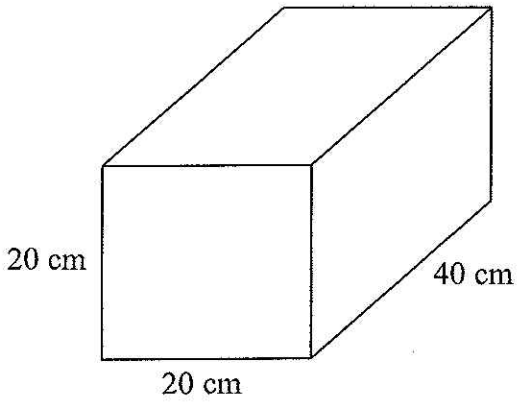


Diagram **NOT** accurately drawn

Work out the volume of the cuboid.

$20 \times 20 \times 40 = 16000$

16000 cm^3

(Total for Question 9 is 3 marks)

10 You can use this rule to work out the total charge for hiring a concrete mixer.

> Total charge = £30 plus £8 each day

Esme hired a concrete mixer for 4 days.

(a) Work out the total charge.

$30 + 8 \times 4$

$30 + 32 = 62$

£ 62

(2)

William also hired a concrete mixer.

The total charge was £110

(b) Work out how many days William hired the concrete mixer for.

$110 = 30 + 8 \times ?$

$110 - 30 = 80$

$80 \div 8 = 10$

Check → $30 + 8 \times 10$

$30 + 80 = 110$

10 days

(3)

(Total for Question 10 is 5 marks)

11 (a) Complete this table.

Write a sensible unit for each measurement.

	Metric	Imperial
Diameter of a football	centimetres	inches
Amount of fuel in a car fuel tank	litres	gallons

(2)

(b) (i) Change 4 kg to grams.

1000g = 1kg

4000 grams

(ii) Change 3500 m*l* to litres.

1000ml in 1 litre

3.5 litres

(2)

(Total for Question 11 is 4 marks)

*12 The table gives information about the costs of posting parcels.

Maximum weight of a parcel	Cost
2 kg	£4.41
4 kg	£7.06
6 kg	£9.58
8 kg	£11.74
10 kg	£12.61
20 kg	£14.69

Umar has to post some parcels.

He has to post

3 parcels with a weight of 6 kg each
1 parcel with a weight of 10 kg
1 parcel with a weight of 3 kg
1 parcel with a weight of 1.2 kg

Umar has £55 to spend on posting the parcels.

Can he post all the parcels?

3 parcels @ 6kg = £9.58 x 3
= £28.74

1 parcel @ 10kg = £12.61

1 parcel @ 3kg = £7.06

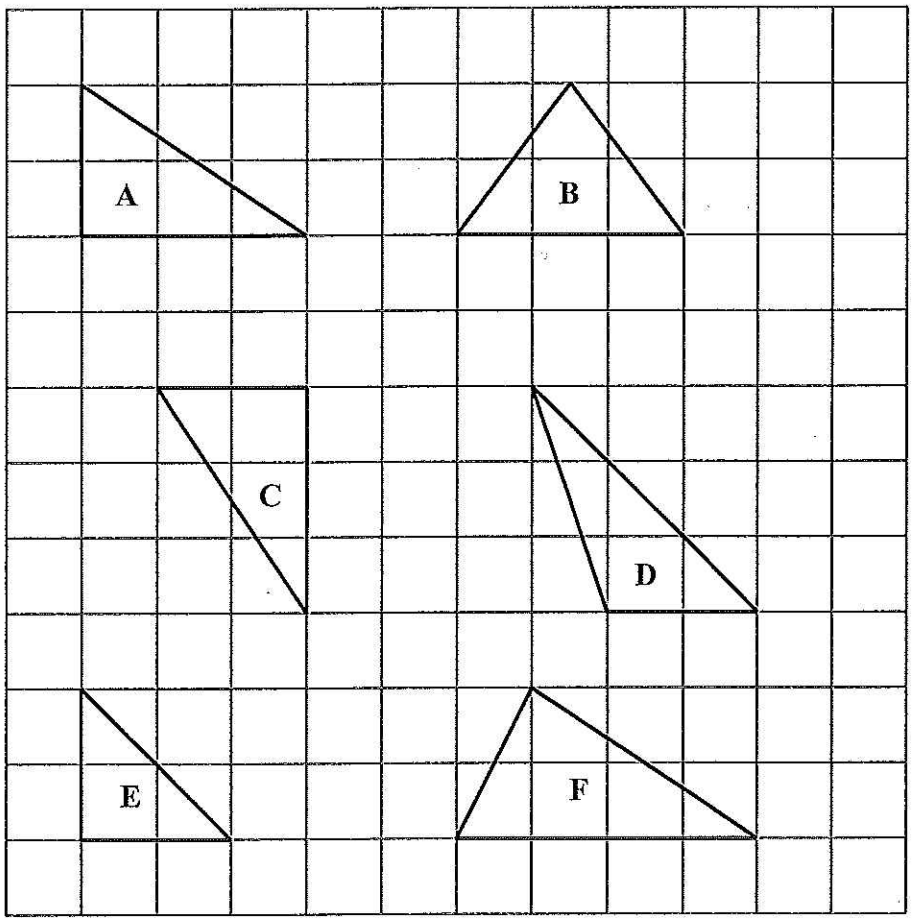
1 parcel @ 1.2kg = £4.41

Total cost of all parcels £28.74 + £12.61 + £7.06 + £4.41 = £52.82

Umar does have enough money as £52.82 is less than £55.

(Total for Question 12 is 4 marks)

13 Here are 6 triangles drawn on a grid of centimetre squares.



(a) Write down the letters of the **two** congruent triangles.

A and C

(1)

(b) Write down the letter of an isosceles triangle.

E or B

(1)

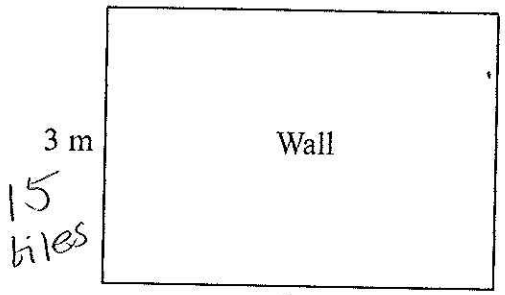
(c) Find the area of triangle **E**.

2 cm^2

(1)

(Total for Question 13 is 3 marks)

*14 Here is a diagram of a wall.



15 tiles

20 tiles

Diagram **NOT** accurately drawn

Tile

100cm = 1m.

Halima wants to cover all of the wall with tiles.

The tiles are squares with sides of length 20 cm.

The tiles are sold in packs.
There are 10 tiles in each pack.
Each pack of tiles costs £34.99

Halima only has £1000

Can she buy enough packs of tiles to cover the wall?

For each 1m, it will need 5 tiles (100÷20=5)
So 4m → 20 tiles
3m → 15 tiles.

So altogether 20×15=300 tiles.

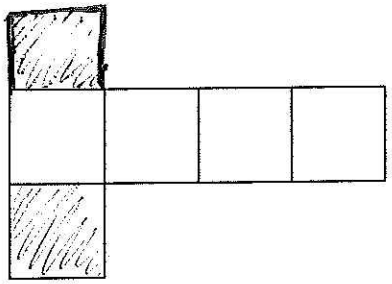
300÷10=30 → so she needs 30 packs of tiles.

Total cost is £34.99×30=£1049.70

If Halima only has £1000 then she does not have enough money to buy the tiles she needs. She is £49.70 short.

(Total for Question 14 is 6 marks)

15 The diagram shows part of a net of a cube.



(a) Add one square to the diagram to complete the net.

(1)

Two opposite faces of the cube are to be shaded.

(b) On the diagram, shade two faces to show how this can be done.

(1)

(c) Write down the number of edges that the cube has.

12

(1)

(Total for Question 15 is 3 marks)

*16 Ashley wants to buy some tins of paint.

He finds out the costs of paint at two shops.

Paint R Us

Deco Mart

Ashley needs 9 tins of paint.
Ashley wants to get all the tins of paint from the same shop.
He wants to pay the cheapest possible total price.

Which of the two shops should Ashley buy the paint from?

Paint R Us.

3 tins would cost 2×£2.19=£4.38

9 tins would cost £4.38×3=£13.14

Deco Mart

9 tins at £1.80=£16.20

10% of £16.20 = £1.62

£16.20-£1.62=£14.58

Ashley should by his paint from Paint R Us as it is £1.44 cheaper than Deco Mart.

(Total for Question 16 is 6 marks)

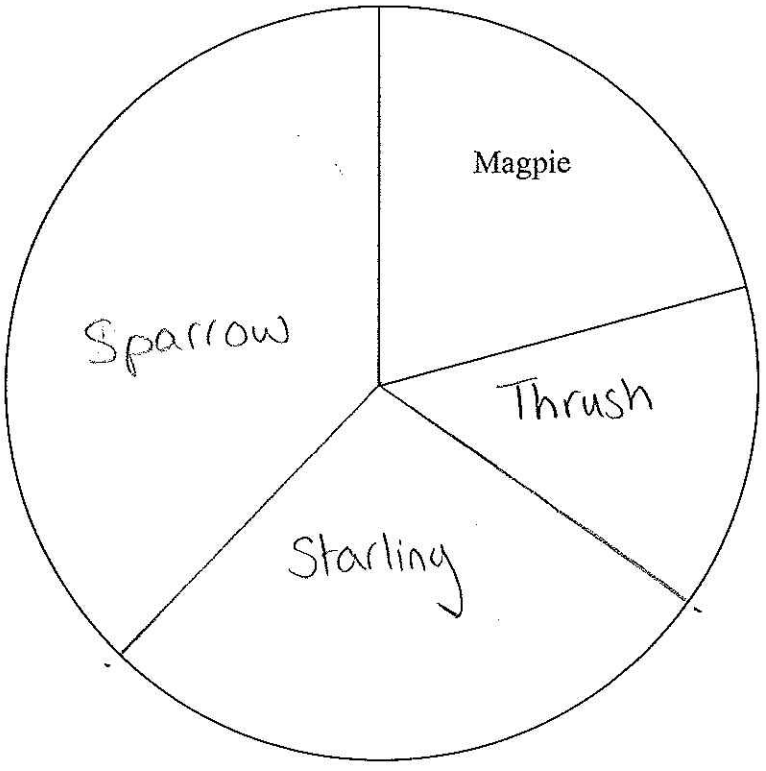
17 The table gives some information about the birds Paula sees in her garden one day.

Bird	Frequency		Each sector
Magpie	15	×5	75
Thrush	10	×5	50
Starling	20	×5	100
Sparrow	27	×5	135

72

Complete the accurate pie chart.

360 ÷ 72 = 5



(Total for Question 17 is 3 marks)

18 $y = 4x + c$

$x = 7.5$

$c = 5.4$

(a) Work out the value of y.

$y = 4 \times (7.5) + (5.4)$

$y = 30 + 5.4 = 35.4$

$y = 35.4$

(2)

$y = 4x + c$

$y = 18.8$

$c = -2.4$

(b) Work out the value of x.

$18.8 = 4 \times x - 2.4$

$(+2.4)$ $(+2.4)$

$21.2 = 4 \times x$

$(\div 4)$ $(\div 4)$

$5.3 = x$

$x = 5.3$

(2)

(Total for Question 18 is 4 marks)

19 It takes Tom 1 hour to lay 30 bricks.
He has to lay 180 bricks.

Tom starts to lay the bricks at 9 am.
He has half an hour break at 11 am.
He has another half an hour break at 1 pm.

What time should Tom finish laying the 180 bricks?

From 9am until 11am is 2hours → 30×2=60
From 11·30am until 1pm is 1·5 hrs → 30×1·5=45
Starts again at 1·30pm. → up to 2pm → 15 bricks.
So up until 2pm he has laid 120 bricks.
3pm → 150 bricks
4pm → 180 bricks

4pm

(Total for Question 19 is 3 marks)

20 Use a calculator to work out

$$\frac{\sqrt{20.4}}{6.2 \times 0.48}$$

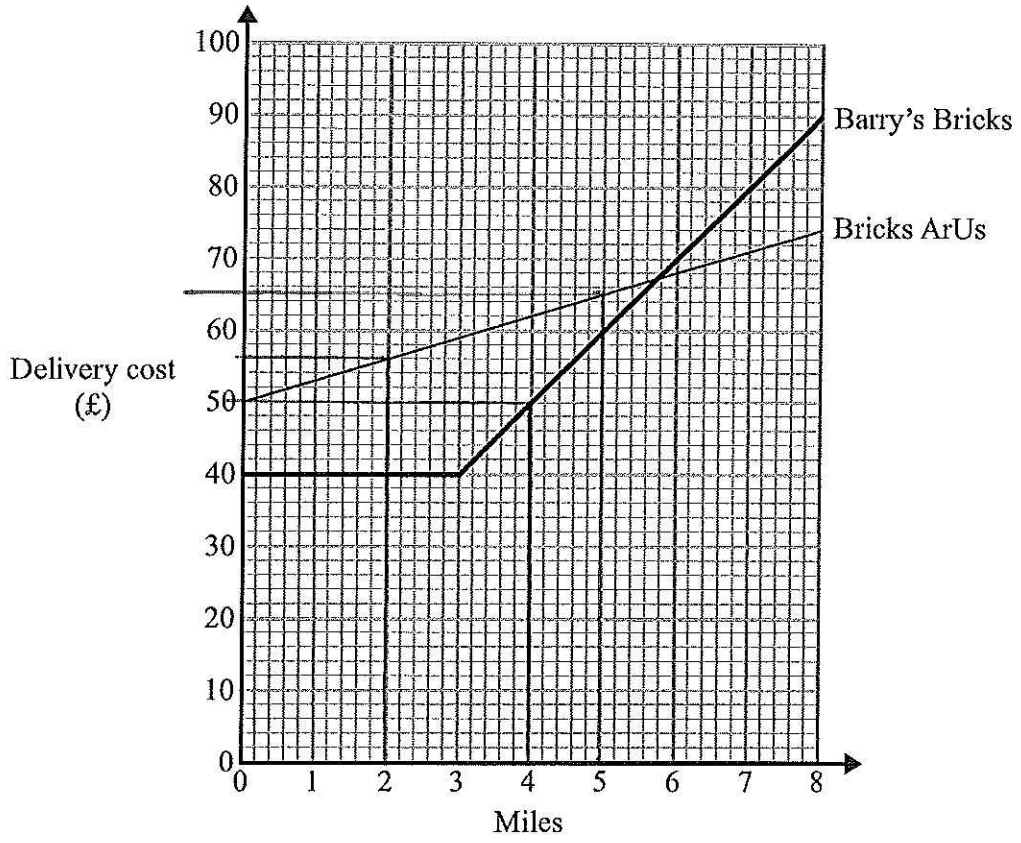
Write down all the figures on your calculator display.
Give your answer as a decimal.

4·516635916 ÷ 2·976
= 1·51 76868

1·51 76868

(Total for Question 20 is 2 marks)

21 Two companies, Barry's Bricks and Bricks ArUs, deliver bricks.
The graph shows the delivery costs of bricks from both companies.



Prakash wants Bricks ArUs to deliver some bricks.
He lives 2 miles away from Bricks ArUs.

(a) Write down the delivery cost.

£ 56
(1)

John needs to have some bricks delivered.
He lives 4 miles from Barry's Bricks. £50
He lives 5 miles from Bricks ArUs. £65

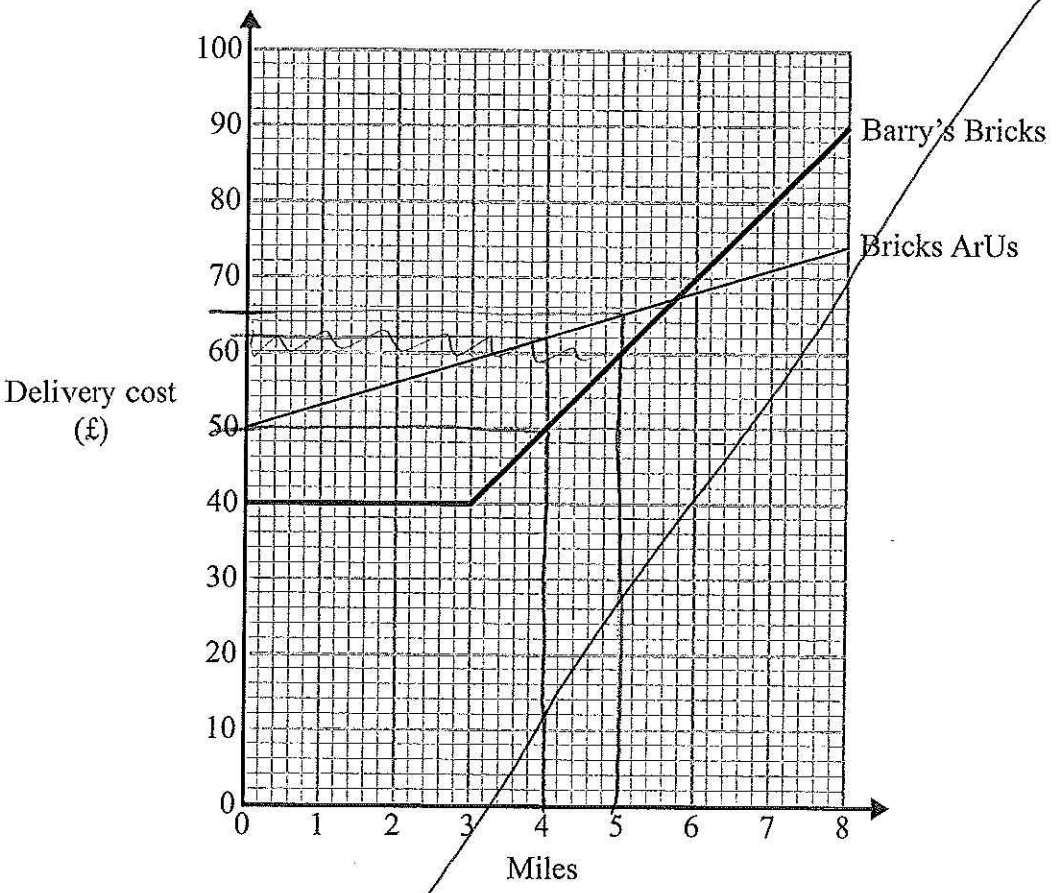
(b) Work out the difference between the two delivery costs.

£65 − £50 = £15

£ 15
(3)

(Total for Question 21 is 4 marks)

21 Two companies, Barry's Bricks and Bricks ArUs, deliver bricks.
The graph shows the delivery costs of bricks from both companies.



Prakash wants Bricks ArUs to deliver some bricks.
He lives 2 miles away from Bricks ArUs.

(a) Write down the delivery cost.

£ 50
(1)

John needs to have some bricks delivered.
He lives 4 miles from Barry's Bricks.
He lives 5 miles from Bricks ArUs.

(b) Work out the difference between the two delivery costs.

Barry's Bricks = £50
Bricks ArUs = £65

65 - 50

£ 15
(3)

(Total for Question 21 is 4 marks)

22 Hannah has a biased coin.
She is going to throw the coin once.
The probability of getting heads is 0.7

(a) Work out the probability of getting tails.

0.3

(2)

Jamal is going to throw this coin 200 times.

(b) Work out an estimate for the number of heads Jamal will get.

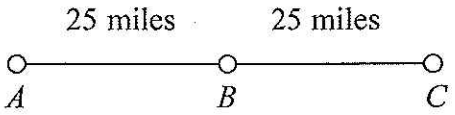
0.7 × 200

140

(2)

(Total for Question 22 is 4 marks)

23



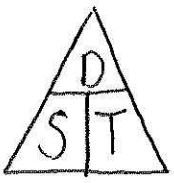
A, *B* and *C* are 3 service stations on a motorway.

AB = 25 miles
BC = 25 miles

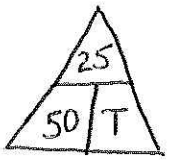
Aysha drives along the motorway from *A* to *C*.

Aysha drives at an average speed of 50 mph from *A* to *B*.
She drives at an average speed of 60 mph from *B* to *C*.

Work out the difference in the time Aysha takes to drive from *A* to *B* and the time Aysha takes to drive from *B* to *C*.
Give your answer in minutes.



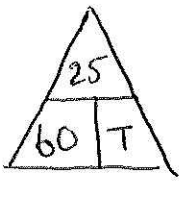
From A to B



Time = $\frac{25}{50}$ = 0.5

so 30minutes.

From B to C



Time = $\frac{25}{60}$ = 0.416̇

In minutes (x60) = 25

30 − 25 = 5

5 minutes

(Total for Question 23 is 3 marks)

*24

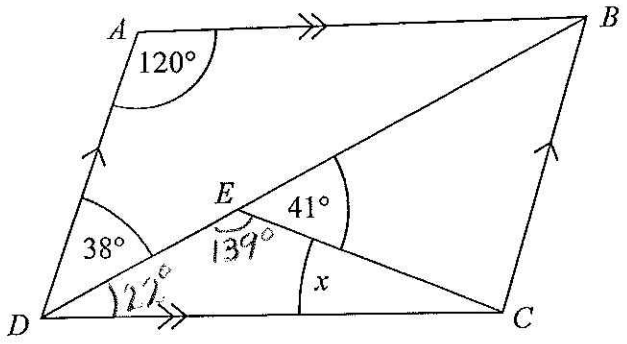


Diagram **NOT** accurately drawn

ABCD is a parallelogram.

Angle *ADB* = 38°.
Angle *BEC* = 41°.
Angle *DAB* = 120°.

Calculate the size of angle *x*.
You must give reasons for your answer.

Angle DEC = 139° because angles on a straight line add up to 180°.

Angle ADC = 60° because co-interior angles in parallel lines add up to 180°.

So angle EDC = 22° → 60 − 38° = 22°.

So Angle ECD must be 19° → because angles in a triangle add up to 180°.

$$\begin{array}{r} 139 \\ +\ 22 \\ \hline 161 \\ \hline 1 \end{array} \qquad \begin{array}{r} 180 \\ -161 \\ \hline 019 \end{array}$$

(Total for Question 24 is 4 marks)

25 (a) n is an integer.

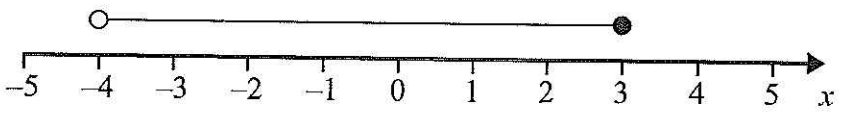
$-1 \leqslant n < 4$

List the possible values of n.

$-1, 0, 1, 2, 3$

(2)

(b)



Write down the inequality shown in the diagram.

$-4 < x \leqslant 3$

(2)

(c) Solve $3y - 2 > 5$

$3y > 7$

$y > 2.3$

$y > 2.3\dot{}$

(2)

(Total for Question 25 is 6 marks)

26 (a) Factorise $4x + 10y$

$2(x + 5y)$

(1)

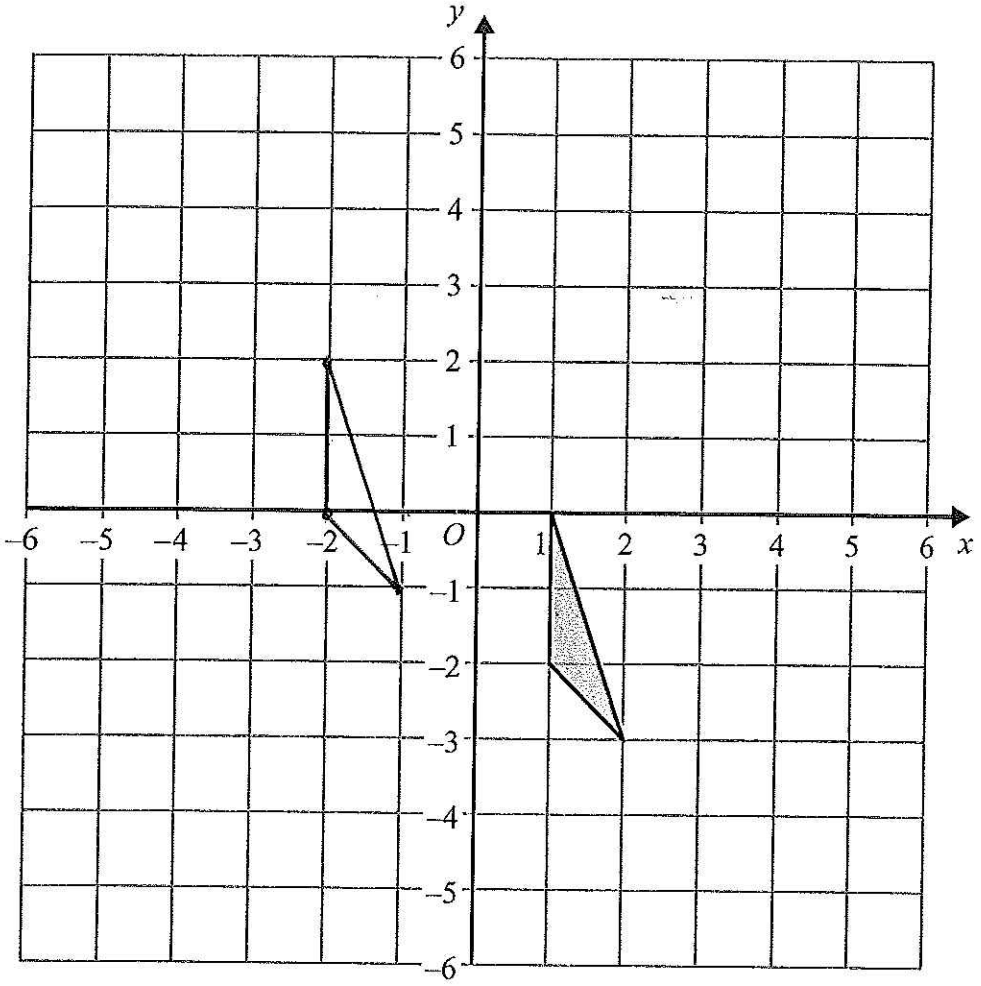
(b) Factorise $x^2 + 7x$

$x(x + 7)$

(1)

(Total for Question 26 is 2 marks)

27



Translate the triangle by $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$.

(Total for Question 27 is 2 marks)

TOTAL FOR PAPER IS 100 MARKS

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